

Biogeochemical Cycles

Research on biogeochemical cycles in agroecosystems focuses on understanding how the land's major biogeochemical cycles are affected by human activities, including agricultural development and energy production. Research will help predict the impact of biogeochemical changes at multiple scales, and to determine if ecosystem harm can be reduced by modifying human behavior and agricultural practices and by applying relevant technologies. For example, research on the global carbon cycle identifies the size, variability, and potential future changes to reservoirs and fluxes of carbon within the Earth system; and provides the scientific underpinning for evaluating options to manage carbon sources and sinks. Specific programs and projects focus on:

- North American and oceanic carbon sources and sinks;
- the impact of land-use change and resource management practices on carbon sources and sinks;
- projecting future atmospheric carbon dioxide and methane concentrations, and changes in land-based and marine carbon sinks; and the global distribution of carbon sources and sinks and how they are changing.